

REMARKS

Reconsideration of this application as amended is respectfully requested.

In the Office Action, claims 1-20 were pending and rejected. In this response, claims 3, 6, 9-10, 13-14, and 16-20 have been canceled without prejudice. Claims 1, 4, 7-8, 12, and 15 have been amended to particularly point out and distinctly claim, in full, clear, concise, and exact terms, the subject matter which Applicant regards as his invention. Specifically, independent claims have been amended to include certain limitations of dependent claims 3, 6, and 9-10. No new matter has been added.

Claims 1-5, 11, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0090486 to Ashburn et al. (hereinafter “Ashburn”) in view of U.S. Patent Application Publication No. 2004/0174463 to Long (hereinafter “Long”) and further in view of U.S. Patent No. 7,389,432 to Chandley et al. (hereinafter “Chandley et al.”).

In view of the foregoing amendment, it is respectfully submitted that the present invention as claimed includes a limitation that is not disclosed or suggested by the cited references. Specifically, for example, independent claim 1 as amended recites as follows:

1. A computer implemented method, comprising:
 - in a normal power state, directly storing pixels of a color plane of image data in a first segment and a second segment of a frame buffer;
 - in a low power state, performing an error diffusion operation on the pixels to reduce a color depth of the pixels, the normal and low power states are independent and switchable from each other, including for each source pixel of each color plane of the image data, calculating an output value corresponding to a source pixel value of the source pixel according to a predetermined algorithm, calculating an error between the output value and the source pixel value, and diffusing the error to up to two neighboring pixels of the source pixel;

storing at least a portion of the pixels with reduced color depth in the first segment of the frame buffer without accessing the second segment of the frame buffer during the low power state;
during the normal power state, fetching the pixels from the first and second segments of the frame buffer for display;
during the low power state, fetching the pixels with reduced color depth from the first segment of the frame buffer for display without accessing the second segment of the frame buffer; and
reducing color bits of each pixel with reduced color depth to fit within the first segment of the frame buffer prior to storing each pixel in the first segment of the frame buffer, including
for each pixel of a color plane, arithmetically adding the error diffused from up to two neighboring pixels to an original value of a pixel, and
storing a predetermined number of most significant bits (MSBs) of the output value in the first segment of the frame buffer.

(Emphasis added)

It is respectfully submitted that none of the cited references, individually or in combination, discloses or suggests the limitation of during the normal power state, fetching the pixels from the first and second segments of the frame buffer for display and during the low power state, fetching the pixels with reduced color depth from the first segment of the frame buffer for display without accessing the second segment of the frame buffer.

The Office Action stated that col. 1, lines 40-53, col. 9, lines 6-16 and 29-39 of Chandley disclose the above limitation (see e.g., 12/15/2009 Office Action, page 4). Applicant respectfully disagrees. The cited sections of Chandley describe reducing refresh rate, by skipping certain refreshes in a lower power mode. There is no disclosure of fetching pixels from different segment of the frame buffer during different power states in Chandley.

In addition, it is respectfully submitted that none of the cited references, individually or in combination, discloses or suggests the limitation of in a low power state, performing an error diffusion operation on the pixels to reduce a color depth of the pixels, the normal and low power states are independent and switchable from each other, including for each source

pixel of each color plane of the image data, calculating an output value corresponding to a source pixel value of the source pixel according to a predetermined algorithm, calculating an error between the output value and the source pixel value, and diffusing the error to up to two neighboring pixels of the source pixel.

Although the Office Action acknowledges that Ashburn and Chandley fail to disclose this limitation, the Office Action contends that Zhang (2006/0077489) discloses such a limitation (see e.g., 12/15/2009 Office Action, page 5). Applicant respectfully disagrees.

There is no disclosure in Zhang limitation of for each source pixel of each color plane of the image data, calculating an output value corresponding to a source pixel value of the source pixel according to a predetermined algorithm, calculating an error between the output value and the source pixel value, and diffusing the error to up to two neighboring pixels of the source pixel. Although paragraph [0052] of Zhang describes error diffusion to neighboring pixels in general, however, Zhang fails to disclose the specific limitation of diffusing the error to up to two neighboring pixels of the source pixel.

Further, the cited references, individually or in combination, also fail to disclose the limitation of for each pixel of a color plane, arithmetically adding the error diffused from up to two neighboring pixels to an original value of a pixel, and storing a predetermined number of most significant bits (MSBs) of the output value in the first segment of the frame buffer.

Again, although Zhang discusses the error diffusion in paragraph [0060] in general, Zhang fails to disclose the specific limitation of arithmetically adding the error diffused from up to two neighboring pixels to an original value of a pixel, and storing a predetermined number of most significant bits (MSBs) of the output value.

Therefore, for reasons set forth above, it is respectfully submitted that claim 1 is patentable over the cited references. Similarly, independent claims 12 and 15 include

limitations similar to those recited in claim 1. Thus, for the reasons similar to those discussed above, independent claims 12 and 15 are patentable over the cited references. Given that the rest of the claims depend from one of the above independent claims, at least for the reasons similar to those discussed above, it is respectfully submitted that the rest of the claims are patentable over the cited references.

Claims 6-10, 13, 14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashburn in view of Long in view of Chandley and in view of U.S. Patent Application Publication No. 2006/0077489 to Zhang et al. (hereinafter "Zhang"). In view of the foregoing remarks, it is respectfully submitted that the rejection has been overcome.

In view of the foregoing, Applicant respectfully submits the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call/email the undersigned attorney.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

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